



VITALS

For Medical Transport Professionals

A Weekly Safety Newsletter

Ground Transport Safety: Part 1

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Air accidents are reported as events per number of flight hours, while ground accidents are reported as events per number of miles. From 1992 to 2001 the 10 year average rate for helicopters was 3.53 accidents per 100,000 flight hours. (1) With an average speed of 120 mph, 12 million miles are traversed in 100,000 flight hours. In other words, there were 3.53 accidents per 12 million miles or 0.29 accidents per million miles. How do medical/EMS helicopter accident rates compare to medical/EMS ground accident rates?

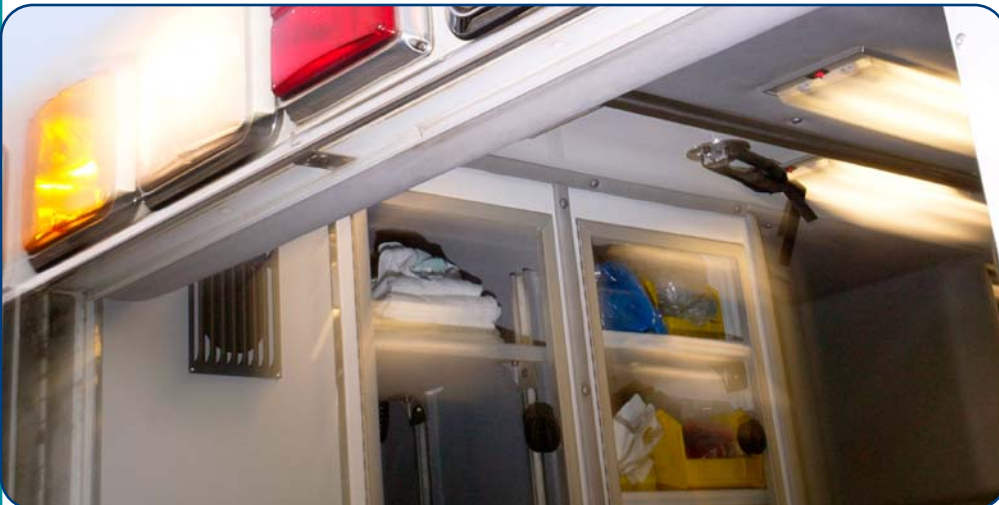
Safety programs should be comprehensive. They begin with the design of your system. The wheels of the minds designing your system should be turning with thoughts of safety well in advance of any vehicular wheels turning. Selection criteria for vehicles, equipment and any technology must include safety considerations such as construction quality, ability to withstand forces generated during travel, ergonomics, and internal vehicle structure designs to minimize injury. Consideration of state of the art restraint systems must be ongoing.

Specific industry accident rates for ground transportation are difficult to find. In 2004, the automobile accident rate was 13.7 accidents/million miles; government vehicle accident rate 8.2 accidents/million miles; and, public utility vehicle rate 5.7/million miles. A Houston study found that ambulances were involved in accidents roughly 13 times the national passenger vehicle rate. Extrapolation of the Houston data to the 2004 rates predicts 178 ambulance accidents/million miles or 1 ambulance accident/5,600 miles. Medflight staffs and operates six mobile intensive care units. Statistically, the probability of an accident on the ground is greater that in the air.



Safety must be woven throughout your SOPs and validated by cultural follow-through. Does your department train personnel to use seat belts, restraint systems, personal protective equipment, and methods of securing equipment? Is implementation of this training enforced on a daily basis? Does noncompliance trigger discipline?

The mother of a patient was allowed to sleep on the bench seat unrestrained. The ambulance went off the road and struck a tree. She died. The unrestrained medic was severely injured. All other occupants were restrained and survived. Other horror stories deal with unsecured equipment. Don't worry about the details of the physics. It's enough to know that weight times velocity equals destruction. A 21 pound monitor defibrillator, such as a Lifepack 12, can become a missile traveling with a velocity dependent on the dynamics of the force vectors of a collision or sudden stop.



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